

REMARKS

The present application was filed on March 31, 2004 with claims 1-18, all of which remain pending. Claims 1, 10, 12, 15 and 18 are the pending independent claims.

In the present Office Action, the Examiner rejected claims 1-18 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,405,162 (hereinafter “Second”).

Applicants respectfully request reconsideration of the present application in view of the amendments above and remarks below. As discussed below, independent claims 1, 10, 12, 15 and 18 have been amended without prejudice solely to clarify the claimed subject matter.

Specifically, claim 1 has been amended to specify that the recited method comprises a step of classifying the communication containing the plurality of words by utilizing a joint classifier to determine at least one category for the communication based on application of the plurality of terms to the plurality of words without considering whether a given one of the plurality of terms is a word or a word class.

Support for the present amendment may be found in the specification at, for example, page 4, line 27, to page 5, line 2; page 6, lines 16-20; and page 7, lines 20-23. Independent claims 10, 12, 15 and 18 have amended in a manner similar to independent claim 1.

With respect to the §102(b) rejection, Applicants initially note that MPEP §2131 specifies that a given claim is anticipated “only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference,” citing Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Moreover, MPEP §2131 indicates that the cited reference must show the “identical invention . . . in as complete detail as is contained in the . . . claim,” citing Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Amended claim 1 includes a limitation directed to classifying the communication containing the plurality of words by determining at least one category for the communication. By contrast, Second is directed to techniques for semantically disambiguating a single instance of a word within a text by determining a meaning of that instance of the word. See Second at, for example, Abstract;

column 1, lines 6-10; and column 5, line 46, to column 6, line 5. See also Second at column 11, lines 4-18 (“ambiguous word”) and at column 12, lines 19-55 (involving “disambiguation of the English word ‘employ’ ”), cited in the present Office Action at page 1, first paragraph, and page 5, sixth paragraph, respectively. In other words, rather than teaching the limitation of claim 1 directed to classifying the communication containing the plurality of words by determining at least one category for the communication, Second instead teaches techniques for determining a meaning of a single word within a text.

Moreover, claim 1 recites a limitation directed to generating a plurality of terms by combining at least one word and at least word class. Second’s disclosure that a list of rules may include both word-based rules and class-based rules fails to teach or suggest generating a plurality of terms by combining at least one word and at least one word class. Instead, Second teaches a technique wherein two distinct sets of semantic tags are respectively based on a dictionary and a semantic ontology. See Second at, for example, column 9, lines 1-21, and column 10, lines 19-21.

Claim 1 recites a further limitation wherein a joint classifier is configured to determine at least one category for the communication based on application of the plurality of terms to the plurality of words without considering whether a given one of the plurality of terms is a word or a word class. Second fails to teach this limitation. Rather, Second teaches a technique which differentiates between word-based rules and class-based rules. See Second at, for example, column 3, lines 1-20; column 11, lines 4-15; and column 11, lines 33-64.

Independent claims 15 and 18, as amended, contain limitations similar to independent claim 1 and are thus believed allowable for at least the reasons identified above with regard to claim 1.

Independent claims 10 and 12, as amended, contain limitations similar to independent claim 1 and are thus believed allowable for at least the reasons identified above with regard to claim 1. Moreover, Applicants respectfully submit that these claims contain further limitations which define additional patentable subject matter, as previously indicated by the Examiner. See the prior Office Action dated October 10, 2007, at page 4, fourth paragraph.

It is important to note that both claims 10 and 12 specify that words and word classes are selected using information gain based term selection, as described with respect to an illustrative embodiment in the present specification at, for example, page 9, line 20, to page 11, line 4. As described in the present specification at page 9, lines 22-25, an information gain value of a given term may be viewed as the degree of certainty gained about which category is transmitted when the term is received or not received.

Independent claim 10 includes a limitation wherein the combination of word information and word class information comprises at least one term-category matrix characterizing words and word classes selected using information gain based term selection.

In the present Office Action at page 4, seventh paragraph, the Examiner contends that this limitation of claim 10 is taught by Segond at column 11, lines 33-49. Applicants respectfully submit that the relied-upon portion of Segond teaches a technique wherein one of a plurality of word-based rules may be selected by accessing type priority data to find the rules from the information type with the highest priority. This prioritization may be based on the relative reliability of results generated using rules based on various types of dictionary information.

Applicants respectfully submit that the relied-upon portion of Segond, directed to selection of word-based rules, fails to disclose selection of words and word classes using information gain based term selection. The relied-upon portion of Segond likewise fails to teach, or even mention, the term-category matrix recited in claim 10. Accordingly, Applicants respectfully submit that the relied-upon portion of Segond fails to meet the limitations of claim 10.

Independent claim 12 contains limitations wherein one or more of the words and word classes utilized to provide the respective word information and word class information are selected using information gain based term selection; and wherein the information gain based term selection calculates information gain values for each of a plurality of terms, a given one of the terms comprising a word or a word class, sorts the terms by their information gain values in a descending order, sets a threshold as the information gain value corresponding to a specified percentile, and selects the terms having an information gain value greater than or equal to the threshold.

In the present Office Action at page 5, first paragraph, the Examiner contends that this limitation of claim 12 is taught by Segond at column 11, line 38, to column 12, line 17. Applicants respectfully disagree with this contention.

Applicants respectfully submit that the relied-upon portion of Segond teaches a technique wherein one of a plurality of word-based rules and one of a plurality of class-based rules may be selected by accessing type priority data to find the rules from the information type with the highest priority. This prioritization may be based on the relative reliability of results generated using rules based on various types of dictionary information. The relied-upon portion of Segond also teaches a technique directed to selecting the class-based rule with the smallest distance between a list of classes of each of a plurality of class-based rules and the list of classes associated with a given word. This technique may also include returning only a class-based rule with a distance smaller than a threshold distance, which may adjusted to find a critical distance value to optimize results.

Applicants respectfully submit that the relied-upon portion of Segond, directed to selection of rules, fails to disclose selection of words and word classes using information gain based term selection. Segond's disclosure directed to calculating a distance between classes of a class-based rule and classes associated with a word fails to disclose the recited calculation of information gain values for each of a plurality of terms.

Likewise, claim 12 includes a limitation directed to selecting the terms having an information gain value greater than or equal to the information gain value corresponding to a specified percentile. By contrast, the relied-upon portion of Segond teaches a technique directed to selecting a class-based rule having a distance between classes smaller than a threshold distance.

Accordingly, Applicants respectfully submit that the relied-upon portion of Segond fails to meet the limitations of claim 12.

Dependent claims 2-9, 16 and 17 are believed allowable for at least the reasons identified above with regard to their respective independent claims. Moreover, these claims are believed to define separately patentable subject matter.

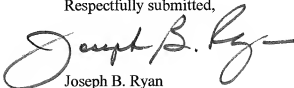
For example, claim 5 recites a limitation wherein one or more of the words and word classes utilized to generate the plurality of terms are selected using information gain based term selection. The Examiner contends that this limitation is taught by Segond at column 3, lines 1-30. Applicants respectfully submit that the relied-upon portion of Segond contains no teachings directed to selection of words and words classes to generate a plurality of terms for use by a joint classifier. Rather, the relied-upon portion of Segond appears to be directed toward the selection of a rule to disambiguate a semantically ambiguous word. Moreover, the relied-upon portion of Segond fails to teach the use of an information gain based term selection as described with respect to an illustrative embodiment in the present specification at, for example, page 9, line 20, to page 11, line 4.

Claim 6 recites a limitation wherein the information gain based term selection determines an information gain value for each of the plurality of terms, the information gain value being indicative of entropy variations over a plurality of possible categories, and being determined as a function of a perplexity computation for an associated classification task. The Examiner argues this limitation is also taught by column 3, lines 1-30, of Segond. Applicants respectfully disagree with the Examiner's contention and respectfully note that the relied-upon portion of Segond fails to even mention either entropy variations or perplexity computations, much less disclose the limitations of claim 6.

Claim 7 recites a limitation directed to appending a class corpus to a word corpus. The Examiner argues this limitation is met by column 2, line 57, to column 3, line 10, of Segond. Applicants respectfully disagree. The relied-upon portion of Segond teaches that a detailed corpus such as a dictionary may contain several different types of information from which rules may be obtained. It contains no disclosure directed to appending a class corpus to a word corpus. Rather, as noted above with regard to claim 1, Segond instead teaches a technique which uses two distinct sets of semantic tags respectively based on a dictionary and a semantic ontology. See Segond at, for example, column 9, lines 1-21, and column 10, lines 19-21.

In view of the above, Applicants believe that amended claims 1-18 are in condition for allowance, and respectfully request withdrawal of the §102(b) rejection.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Joseph B. Ryan", with a long horizontal flourish extending to the right.

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